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10/608,313	06/26/2003	Ross Cutler	302972.1	8014

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EXAMINER

MADDEN, GREGORY VINCENT

ART UNIT	PAPER NUMBER
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2622

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/608,313

Applicant(s)

CUTLER ET AL.

Examiner

Gregory V. Madden

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-72 is/are pending in the application.
- 4a) Of the above claim(s) 22-50 and 62-68 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21, 51-61 and 69-72 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I (Claims 1-21, 51-61, and 69-72) in the reply filed on November 14, 2006 is acknowledged.

Claim Objections

Claim 3 is objected to because of the following informalities: The first line of claim 3 includes the limitation "said omni-directional camera", but there is no antecedent basis for "said omni-directional camera" in the preceding claims. Claim 2 discloses only "a 360-degree camera". For the purposes of examination, the Examiner will consider the "said omni-directional camera" to be the 360-degree camera. However, appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7, 9-12, 14, 15, 20, 21, and 55-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ippolito et al. (U.S. Pat. 6,072,522) in view of Taylor et al. (U.S. Pat. 7,113,201).

First, regarding **claim 1**, the Ippolito reference teaches an automated system for capturing and viewing an event having event participants comprising multiple cameras (video cameras 130) simultaneously capturing images of different sub-events occurring in a space associated with an event (i.e.

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capturing images of different speakers during the course of a meeting), a server (video conferencing management unit 16) capable of broadcasting the captured sub-events, and one or more clients in network connection (via electronic communication network 17) with said server (16) that view portions of the captured event (See Fig. 8 and Col. 13, Line 27 – Col. 14, Line 28). What Ippolito fails to explicitly teach is that the server is not only capable of broadcasting the sub-events, but also of recording the captured sub-events. However, the Taylor reference teaches an automated system of capturing and viewing an event (videoconference) having a multiple cameras (2-1, 2-2, 2-3, etc.) simultaneously capturing images of different sub-events, wherein a server (computer 20) is capable of recording the captured sub-events, as is taught in Fig. 1 and Col. 2, Lines 21-36. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the recording of the captured sub-events by the server, as taught by Taylor, with the broadcasting of the captured sub-events, as shown by Ippolito. One would have been motivated to do so because by recording events captured during a videoconference, both the local users and external users can review contents from the meeting that they may have missed or want to reevaluate.

As for **claim 2**, the limitations of claim 1 are taught above, and the Ippolito reference further shows that the multiple cameras are a 360-degree camera (video cameras 130 as shown in Fig. 8) centrally positioned to monitor in substantially 360-degrees the space in which the event occurs (i.e. centrally located on the meeting table 18). Please refer again to Col. 13, Line 27 – Col. 14, Line 28. Also, the Taylor reference teaches multiple cameras (2-1, 2-2, 2-3, etc.) positioned in different areas of the meeting room to act as a remote view camera, a presenter view camera, and a whiteboard capture camera, as is illustrated in Fig. 1 of Taylor.

Regarding **claim 3**, the limitations of claim 2 are taught above by Ippolito in view of Taylor, and the Ippolito reference further discloses that the omni-directional (or 360-degree) camera comprises a set

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of cameras (video cameras 130) configured in a circular back to back fashion. Please see Fig. 8 and Col. 13, Line 27 – Col. 14, Line 28.

Next, considering **claim 7**, again the limitations of claim 2 are taught above, and Ippolito also teaches that the system further comprises a virtual director (electronic circuit board 250) that allows switching between the multiple cameras (130) to display a view of one of the different sub-events, as taught in Figs. 8 and 9, and Col. 15, Lines 4-31.

In regard to **claim 9**, the limitations of claim 1 are taught above, and the Ippolito reference further teaches that the system comprises a microphone device (radial array of audio microphones 120) that simultaneously captures audio data of the event. Please refer to Fig. 8 and Col. 13, Line 27 – Col. 14, Line 28. Taylor also teaches directional microphone array 4 in Fig. 1 and Col. 2, Lines 21-36.

As for **claim 10**, the limitations of claim 9 are taught above, and Ippolito also discloses that the microphone device (120) is used to determine the direction from which an event participant (principle speaker) is speaking by using sound source localization. See Col. 7, Lines 38-46.

Regarding **claim 11**, the limitations of claim 9 are again set forth above, and Ippolito discloses that captured images of the sub-events are used in combination with sound source localization to refine the determined direction from which an event participant is speaking, as is taught again in Col. 7, Lines 38-46 and Col. 13, Line 27 – Col. 14, Line 28.

Considering **claim 12**, the limitations of claim 1 are taught above by Ippolito in view of Taylor, and Ippolito discloses that the system is used for broadcasting an event to one or more remote clients (via electronic communication network 17), as is taught in Col. 14, Lines 1-13.

As for **claim 14**, the limitations of claim 1 are again taught above, and Ippolito further teaches that the system comprises a monitor (video display 13) for displaying one or more remote participants where the event occurs, as shown in Fig. 8 and Col. 14, Lines 1-13.

In regard to **claim 15**, again the limitations of claim 1 are taught above, and Ippolito discloses that the system further comprises an event kiosk (video conferencing management unit 16) which is used to control event broadcast, as is taught in Figs. 1 and 8, as well as in Col. 5, Lines 38-44.

Regarding **claim 20**, the limitations of claim 1 are taught above, and the Taylor reference also teaches an archive server (meeting archive database 60) on which recorded events are stored and wherein the archive server plays back the recorded events to the clients. Please refer to Fig. 15 and Col. 13, Lines 32-50.

As for **claim 21**, again, Ippolito in view of Taylor discloses the limitations of claim 1 above, and the Taylor reference further teaches that the system comprises an archive server (meeting archive database 60) on which annotations to the captured sub-events are saved (e.g. text data stored with a link to the video data), as is shown in Col. 13, Lines 32-58.

Next, considering **claim 55**, the Ippolito reference teaches an automated system for capturing and viewing an event having event participants, the system comprising multiple cameras (video cameras 130) simultaneously capturing images of different sub-events occurring in a space associated with an event, an event server (video conferencing management unit 16) that processes the event data in substantially real time, and one or more clients in network connection (via electronic communication network 17) with said server (16) that allows viewing of the events (See Fig. 8 and Col. 13, Line 27 – Col. 14, Line 28). What Ippolito fails to explicitly disclose is that the system comprises an event post processor that processes the event data only when the event is completed. However, Taylor discloses an automated system for capturing and viewing an event having event participants, wherein the system comprises an event post processor (archive processor 58) that processes the event data only when the event is completed, as it taught in Col. 13, Lines 39-57.

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As for **claim 56**, the limitations of claim 55 are taught above, and the Taylor reference further discloses an archive server (meeting archive database 60) which acts as a store for the event data, as is again taught in Col. 13, Lines 39-57.

Regarding **claim 57**, again the limitations of claim 55 are taught above, and the Ippolito reference further teaches that the event server (video conferencing management unit 16) performs both acquiring of audio and video from the capture devices and providing the audio and video to the client (via electronic communication network 17), as is disclosed in See Fig. 8 and Col. 13, Line 27 – Col. 14, Line 28.

Finally, regarding **claims 58-61**, these claims are drawn toward a computer-readable medium having computer-executable instructions for carrying out operations of the system taught above in claims 1-3, 12, and 14 by Ippolito in view of Taylor. As both Ippolito and Taylor teach that a computer executes the system in the above claims, claims 58-61 are rejected on the same grounds as claims 1-3, 12, and 14.

Claims 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ippolito et al. (U.S. Pat. 6,072,522) in view of Taylor et al. (U.S. Pat. 7,113,201) further in view of Liu et al. (U.S. Pat. 6,839,067).

Next, in regard to **claim 4**, the limitations of claim 3 are taught above by Ippolito in view of Taylor, but neither Ippolito nor Taylor teach that the system comprises a panoramic stitcher that stitches together images captured from each camera to create a panoramic image of the space in which the event occurs. However, the Liu reference teaches a system of capturing and viewing an event having event participants, wherein the system comprises multiple cameras (multiple wide-angle cameras 110 and pan/tilt/zoom camera 120) wherein a panoramic stitcher stitches together images captured from the multiple wide-angle cameras to create a panoramic image of the space in which the event occurs, as is shown in Figs. 1-3 and Col. 2, Lines 46-59. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the panoramic stitcher of Liu with the multiple

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cameras of Ippolito in view of Taylor. One would have been motivated to do so because by stitching together views from each of the cameras, an external participant in the videoconference can view the entire meeting space as opposed to or in addition to a principle speaker, as is illustrated by Liu in Fig. 3.

As for **claim 5**, the limitations of claim 2 are taught above, and while the Ippolito reference does teach that the video cameras 130 are each integrated with a microphone 120, as is shown in Fig. 8 and Col. 13, Lines 28-52, Ippolito does not explicitly state that one of the multiple cameras is a presenter view camera, only that each camera can be considered a presenter view camera to focus on the principle speaker. However, the Liu reference teaches that the pan/tilt/zoom camera 120 is a presenter view camera in Fig. 3 and Col. 4, Lines 28-53.

Regarding **claim 6**, again the limitations of claim 2 are taught above, and while the Ippolito reference does teach that the video cameras 130 are each integrated with a microphone 120, as is shown in Fig. 8 and Col. 13, Lines 28-52, Ippolito does not explicitly state that one of the multiple cameras is a remote view camera, only that each camera can be considered a remote view camera to capture the meeting space. However, the Liu reference teaches that the panoramic camera 110 is a remote view camera in Figs. 1 and 3, and Col. 4, Lines 28-53.

Considering **claim 8**, the limitations of claim 7 are taught above by Ippolito in view of Taylor, and the Ippolito reference also teaches that the virtual director (electronic circuit board 250) determines if a person is speaking (via radial array of microphones 120) and facing toward a display (display 13) that displays at least one remote event participant, and thus using the appropriate camera (video camera 130) to display. Please refer to See Fig. 8 and Col. 13, Line 27 – Col. 14, Line 28. What Ippolito fails to specifically teach is that when it is determined if a person is talking and a separate presenter view camera can track them and provide a higher resolution image than the 360-degree camera, the presenter view camera is used for display. Otherwise, the 360-degree camera view is displayed. However, noting the Liu reference, Liu teaches that a separate presenter view camera (pan/tilt/zoom camera 110 or 210) is

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used to focus on a desired portion of a meeting (i.e. a presenter or principle speaker) at a higher resolution than the 360-degree camera (panoramic camera 110 or 240), as is illustrated in Figs. 2 and 3, and Col. 3, Lines 18-51. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated using the presenter view camera, as taught by Liu, with the multiple view cameras of Ippolito in view of Taylor.

Claims 13, 19, and 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ippolito et al. (U.S. Pat. 6,072,522) in view of Taylor et al. (U.S. Pat. 7,113,201) further in view of Rodriguez, Jr. et al. (U.S. Pat. 6,179,426).

Next, considering **claim 13**, the limitations of claim 1 are once again shown by Ippolito in view of Taylor, and while the reference does show that event materials are presented on a board (flip chart 14, as shown in Fig. 1) during a videoconference, neither Ippolito nor Taylor teaches that the system further comprises a projector for projecting event materials onto a screen. However, the Rodriguez reference teaches a videoconferencing system that comprises a projector (front projection system 100) for projecting event materials onto a screen (projections screen 102), as is shown in Fig. 1 and Col. 6, Lines 44-64. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the projector of Rodriguez with the videoconferencing system of Ippolito in view of Taylor. One would have been motivated to do so because by providing a projector in a videoconferencing system, a presenter can use previously-prepared event materials to conduct the meeting and share the materials with both local and external participants, thus saving time and providing a professional presentation.

In regard to **claim 19**, again the limitations of claim 1 are taught above, and the Rodriguez reference also teaches that the system comprises a graphics capture device (camera 756) used to capture

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data presented in the event (data placed on the screen 702), as is illustrated in Fig. 13 and Col. 13, Lines 8-21.

As for **claim 51**, Ippolito teaches a system for conducting a disturbed meeting, wherein the system comprises a 360-degree camera (cameras 130) for capturing images of meeting participants in a meeting (videoconference, etc.) in substantially 360 degrees about the 360 degree camera, a microphone array (microphones 120) for capturing the audio of the meeting that is synchronized with the images captured by the 360-degree camera, and a meeting server (video conferencing management unit 16) for performing processing required to broadcast meeting data (See Fig. 8 and Col. 13, Line 27 – Col. 14, Line 28). What Ippolito fails to disclose is that the system comprises a whiteboard camera for capturing images of contents written on a whiteboard, a presenter camera for capturing images of an overview of the meeting room, and that the meeting server records meeting data. However, the Taylor reference teaches both a presenter camera (i.e. camera 2-3) that captures images of an overview of the meeting room, and a meeting server (computer 20) that is capable of recording the meeting data, as is taught in Fig. 1 and Col. 2, Lines 21-36. Further, the Rodriguez reference teaches a whiteboard camera (camera 756) used to capture contents written on a whiteboard (screen 702), as is illustrated in Fig. 13 and Col. 13, Lines 8-21. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the presenter camera and recording server of Taylor and the whiteboard camera of Rodriguez with the system of Ippolito. One would have been motivated to do so because providing an overview of the meeting room would allow the external participants in the meeting view all of the participants in the meeting, not just the principle speaker, thus allowing for a more real-life interactive experience during the videoconference. Further, by providing the whiteboard camera, the external users can easily view materials presented on a whiteboard that may not normally be captured by presenter view cameras or 360-degree view cameras, thus also allowing for a more real-life interactive experience during the videoconference.

Regarding **claim 52**, the limitations of claim 51 are taught above, and the Ippolito reference further discloses that the system comprises a network (electronic communications network 17) connecting the meeting server (video conference management unit 16) to at least one remote meeting participant, wherein the network is used to broadcast meeting images and audio from the server (16) to participants and received audio and images from the remote meeting participants at the server. Please refer to Fig. 1 and Col. 1, Lines 26-47.

In regard to **claim 53**, the limitations of claim 51 are again taught above, and the Taylor reference teaches that the system comprises an archive server (meeting archive database 60) for performing processing required to playback recorded meeting data. Please refer to Fig. 15 and Col. 13, Lines 32-50.

As for **claim 54**, the limitations of claim 53 are set forth above, and the Taylor reference again teaches in Fig. 15 and Col. 13, Lines 32-50 that the system comprises one or more archive clients capable of laying back the captured images and synchronized audio.

Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ippolito et al. (U.S. Pat. 6,072,522) in view of Taylor et al. (U.S. Pat. 7,113,201) further in view of McNerney et al. (U.S. Pat. 5,999,208).

Next, in regard to **claim 16**, the limitations of claim 15 are taught above by Ippolito in view of Taylor, but neither Ippolito nor Taylor teach that the event kiosk comprises a graphical user interface (GUI). However, the McNerney reference involves a videoconferencing system (virtual reality mixed media meeting room) having an event kiosk (virtual meeting services circuit 28) that comprises a graphical user interface (601) to allow a user to control the conference content (See Col. 4, Lines 8-59 and Col. 5, Lines 45-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the graphical user interface of McNerney with the event kiosk of Ippolito in view of Taylor, as the use of a graphical user interface to control the videoconference

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allows a meeting participant to choose operations of the system based on visual representations presented on the GUI, which allows for easy interaction and visually familiar control of the videoconferencing system (See Col. 5, Lines 45-61 of McNerney).

As for **claim 17**, the limitations of claim 16 are taught above, and the McNerney reference further discloses that the graphical user interface comprises an initial display showing initial status of the system, as is taught in Col. 5, Line 56 – Col. 6, Line 2.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ippolito et al. (U.S. Pat. 6,072,522) in view of Taylor et al. (U.S. Pat. 7,113,201) further in view of Tosaya (U.S. Pat. 6,549,230).

Considering **claim 18**, the limitations of claim 15 are taught above, but neither the Ippolito nor the Taylor reference teaches that the event kiosk is located on one of the multiple cameras. However, the Tosaya reference teaches an event kiosk (portable conference center 1000), wherein the portable conference center contains a camera (video camera 1110) and microphones (audio input device 1120) to allow for videoconferencing (See Fig. 1 and Col. 7, Line 28 – Col. 9, Line 18). It would have been obvious to one of ordinary skill in the art to have included an event kiosk on one of the cameras, as done by Tosaya, with the system of Ippolito in view of Taylor. One would have been motivated to do so because by incorporating a kiosk into a camera, the system becomes far more portable and allows for easier initial set-up by the event participants.

Claims 69 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ippolito et al. (U.S. Pat. 6,072,522) in view of Tosaya (U.S. Pat. 6,549,230).

Next, regarding **claim 69**, the Ippolito reference teaches a system for conducting a distributed meeting, wherein the system comprises a 360-degree camera (video cameras 130) for capturing images of

meeting participants in a meeting room in substantially 360 about the 360 degree camera, wherein the images and associated meeting data are broadcast (via video conferencing management unit 16 and electronic communication network 17) (See Fig. 8 and Col. 13, Line 27 – Col. 14, Line 28). What Ippolito fails to specifically teach is that the 360-degree camera includes an integrated computer that performs processing required to broadcast the images and associated meeting data. However, the Tosaya reference teaches a portable video conferencing device (1000) that contains a camera (1110) to capture images of meeting participants in a meeting room, wherein the portable video conferencing device performs processing required to broadcast the images and meeting data, as is taught in Figs. 1 and Col. 7, Line 28 – Col. 9, Line 18. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the integrated computer of Tosaya with the 360-degree camera of Ippolito, as by incorporating a computer into the camera, the system becomes far more portable and allows for easier initial set-up by the event participants (i.e. there is no external computer necessary to conduct the videoconference).

As for **claim 72**, the limitations of claim 69 are taught above, and the Ippolito reference further teaches that the associated meeting data comprises audio that is synchronized with the images, as is taught in Col. 13, Line 27 – Col. 14, Line 28.

Claims 70 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ippolito et al. (U.S. Pat. 6,072,522) in view of Tosaya (U.S. Pat. 6,549,230) further in view of Taylor et al. (U.S. Pat. 7,113,201) and still further in view of Rodriguez, Jr. et al. (U.S. Pat. 6,179,426).

Regarding **claim 70**, Ippolito in view of Tosaya teaches the limitations of claim 69 above, but what Ippolito in view of Tosaya fails to disclose is that the system comprises a whiteboard camera for capturing images of contents written on a whiteboard and a presenter camera for capturing images of an overview of the meeting room. However, the Taylor reference teaches a presenter camera (i.e. camera 2-

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3) that captures images of an overview of the meeting room, as is taught in Fig. 1 and Col. 2, Lines 21-36. Further, the Rodriguez reference teaches a whiteboard camera (camera 756) used to capture contents written on a whiteboard (screen 702), as is illustrated in Fig. 13 and Col. 13, Lines 8-21. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the presenter camera of Taylor and the whiteboard camera of Rodriguez with the system of Ippolito in view of Tosaya. One would have been motivated to do so because providing an overview of the meeting room would allow the external participants in the meeting view all of the participants in the meeting, not just the principle speaker, thus allowing for a more real-life interactive experience during the videoconference. Further, by providing the whiteboard camera, the external users can easily view materials presented on a whiteboard that may not normally be captured by presenter view cameras or 360-degree view cameras, thus also allowing for a more real-life interactive experience during the videoconference.

Finally, in regard to **claim 71**, the limitations of claim 70 are set forth above, and the Ippolito reference further teaches that the system comprises a microphone array (radial array of audio microphones 120) for capturing the audio of the meeting that is synchronized with the images captured by the 360-degree camera (video cameras 130). Please refer to Fig. 8 and Col. 13, Line 27 – Col. 14, Line 28.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Keenan et al. (U.S. Pub. 2004/0201698)

Maeng et al. (U.S. Pat. 6,731,334)

Washino et al. (U.S. Pat. 5,625,410)

Piotrowski (U.S. Pat. 6,496,217)

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Okaya (U.S. Pat. 5,808,663)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory V. Madden whose telephone number is 571-272-8128. The examiner can normally be reached on Mon.-Fri. 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Madden
January 24, 2007


NGOC-YEN VU
SUPERVISORY PATENT EXAMINER